1 Logan Lane
Manalapan, New Jersey 07726

September 27, 1995

William F. Caton, Acting Secretary
Federal Communications Commission
1919 M Street, N. W. Room 222
Washington, DC 20554

re: WT **Docket 95-102**, NPRM for Part 95 "**Family Radio Service**" **RM-8499**

Dear Mr. Caton,

Enclosed are an original and twelve copies of comments relating to the current proposal for an unlicensed UHF personal radio service in the present GMRS spectrum. Please distribute these to the appropriate parties for their consideration.

An additional copy is partially folded into a self-addressed, stamped envelope. Please stamp this with the date these comments are filed and return the stamped copy in the envelope.

Thank-you very much for filing and distributing these comments.

Sincerely,

Susan L. Feit

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20544

In the Matter of:

Amendments to Part 95 of the Commission's Rules	)	WT Docket Number 95-102
for the Family Radio Service, a short distance	)	
two-way voice radio service for personal use	)	RM-8499

From: Susan L. Feit, Communications Consultant. Amateur callsign N2NRR
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To: The Commission

SUMMARY:

These comments recommend methods to deal with:

- **The inevitable business users of the FRS**
- **Use of the 467 MHz interstitials without interference to GMRS repeaters**
- **Separation of licensed and unlicensed users**

These comments take into consideration:

- **FRS uses listed in Tandy's July 20, 1994 petition for FRS**
- **Comments by REACT and other GMRS users**
- **Future narrowband GMRS repeaters**

And result in:

- **Revised FRS channel table 95.627(a)**
- **Revised FRS bandwidth rule 95.631(c)**

1. The Inevitable Business Users in the FRS

The proposed *Family Radio Service* will draw more types of users than the "family" users implied by the name. Tandy's July 20, 1994 FRS petition specifically makes reference to the use of FRS by public safety organizations and contains an attached article from the February 23, 1994 *Washington Post* concerning benefits of an FRS-like radio service to numerous small businesses. Both of these types of users are Part

90 eligibles and, in keeping with the FCC Docket 87-265, should not be using Part 95 spectrum, but should be licensed, respectively, in the Public Safety Radio Service and the Business Radio Service.

These, and many other, Part 90-eligibles will choose the FRS over the inconvenience of frequency coordination and licensing under Part 90. (Part 90-eligibles have already demonstrated a distinct preference for use of a radio service which requires no coordination, let alone no licensing, by their heavy use of the GMRS repeater frequencies prior to the implementation of FCC Docket 87-265. This docket instituted the GMRS rules changes which restricted new GMRS licenses to individuals and their families. Prior to this time, virtually all GMRS repeater frequencies near any metropolitan area were saturated by business users who demonstrated a distinct lack of respect for personal users.)

Unless some distinct, specific action, apparent to all FRS users and potential users, is taken to restrict Part 90-eligibles from using a radio service which is supposed to be for families, the FRS frequencies would shortly become occupied by business and public safety users. Such users would likely show the same distinct lack of respect for personal users which the former business users of the GMRS showed for personal and family GMRS licensees.

As the majority of FRS airtime is likely to be occupied Part 90-eligibles, it seems only appropriate that the majority of frequencies for the FRS come from Part 90 spectrum. The frequencies from 467.750 through 467.925 are allocated to the Part 90 Business Radio Service. They are all specified for a maximum of 2 watts by frequency-coordinated itinerant mobile users. Despite the requirement for coordination and licensing, the upper four of the eight 25-kilohertz-spaced frequencies, and two of the seven 12.5-kilohertz "interstitial" frequencies are increasingly used by unlicensed users of FM handheld transceivers, and are known by the color, shape or letter "designators" applied to the transceivers to denote their frequency:

467.7625	"J dot"
467.8125	"K dot"
467.850	"Silver Star"
467.875	"Gold Star"
467.900	"Red Star"
467.925	"Blue Star"

It would seem entirely appropriate, and very consistent with current use, that the seven interstitials between the eight 25-kilohertz spaced channels in this region of the spectrum be used for the FRS.

It is, therefore, respectfully requested that the Commission use the following channels in table 95.627(a) in place of the proposed FRS channels which are already in use in the GMRS:

Frequency	Bandwidth
467.7625	12.5 kHz
467.7875	12.5 kHz
467.8125	12.5 kHz
467.8375	12.5 kHz
467.8625	12.5 kHz
467.8875	12.5 kHz
467.9125	12.5 kHz

2. Unintentional FRS Interference to GMRS Repeaters -- Problem and Solutions

The proposed FRS channels listed in table 95.627(a) include frequencies between GMRS repeater outputs and between GMRS repeater inputs. Section 95.631(c) lists the emission bandwidth for FRS transmitters as 12.5 kHz. The acceptance bandwidth for the input of a GMRS repeaters is 20 kHz. GMRS repeaters are spaced 25 kHz apart, resulting in only 5 kHz of unused spectrum between the inputs. The sensitivity of a GMRS repeater is such that handheld transceivers of 1, 2 or 4 watts provide a solid signal into the repeater. Therefore, a 1/2 watt FRS transceiver operating between the inputs of two adjacent GMRS repeaters would provide 3.75 kHz of sidebands into EACH of two adjacent GMRS repeaters, causing simultaneous interference to repeaters on either side of the FRS transmission, ***without the FRS user having any knowledge that he or she is interfering with potentially dozens of GMRS repeater users***. The GMRS repeater users will not be able to contact the unintentional FRS interferer, as he or she cannot hear the GMRS repeater

To alleviate this potentially severe problem of unintentional interference, it is respectfully requested that the Commission either eliminate the FRS channels in the range of 467.5625 through 467.7125, or require that the bandwidth for an FRS transceiver in this frequency range be 6.25 kHz. A 6.25 kHz bandwidth requirement would significantly reduce the possibility of unintentional interference to GMRS repeater operation, and motivate manufacturers who would otherwise put off introducing 6.25 kHz bandwidth radios until the January 1, 2005 deadline for the Part 90 re-farming for 6.25 kHz radios.

3. Radio Spectrum Reserves for Future GMRS Use

So as to leave some possibility for future narrowband repeaters in the GMRS, and licensed narrowband simplex, it would be advisable not to utilize *all* possible interstitials frequencies between GMRS repeater

inputs. **To this end, it is requested that only *every-other* interstitial be used for FRS**. However, it is requested that that the 467 MHz frequencies at each outside edge of the GMRS spectrum be added to the table of FRS channels. This would therefore *include* 467.7375 and 467.5375 MHz, but *exclude* frequencies in the following table:

Channels to be Reserved for Future Licensed GMRS Narrowband Repeaters

467.5875	**462.5875**
467.6375	**462.6375**
467.6625	**462.6625**
467.7125	**462.7125**

4. Separation of Licensed (GMRS and Part 90) Users and Unlicensed (FRS) Users

The FRS, as currently proposed, calls for both unlicensed and licensed users to share the same spectrum. As has been pointed out by prior commenters, this type of situation is likely to lead to problems, as one category of users may feel "superior" to the other. Or a group of users may feel as though they are being bullied -- and they then "fight back," leading to illegal amplifiers and unruly escalation typified by the rude and often obscene behavior on 27 MHz Citizen's Band -- which happened when licenses were phased out, and continues to this day.

To prevent this sort of devastating occurrence, these comments set forth a table of channels and channel bandwidths designed to keep licensed users and unlicensed users on different frequencies. This table is also designed to keep power levels on adjacent channels similar, so as to prevent adjacent channel interference.

The tables of channels given in these comments have unlicensed FRS operations taking place on frequencies which are between those which require coordination and licensing. The FRS operations would in no way change these requirements for the 25 kHz-spaced frequencies between 467.750 and 467.925 MHz. Since the Part 90 Refarming initiative generally requires all radios type accepted after August 1, 1996 to have a 12.5 kHz (or less) bandwidth, there will not be any spectral overlap of the licensed business users with the unlicensed FRS users on the interstitial channels.

The proposed FRS rules list the use of the 462 MHz interstitial frequencies allocated to the GMRS in 1988. As this would cause the mixing of licensed and unlicensed operations, it is very strongly advised, for the reasons set forth above, that such dual use not be allowed. It is respectfully requested that the

Commission remove these 462 MHz channels from the FRS channel table 95.627(a), and leave access to these licensed-user-only channels as a motivation for a user to obtain a GMRS license.

5. The Resulting Table of Channels and Bandwidths

If these comments are fully implemented, the resulting channel table 95.627(a) would be as follows, with rule 95.631(c) being represented by the Bandwidth listed in the third column.

Channel Number	Frequency	Bandwidth	Origin
1	467.9125	**12.5 kHz**	Part 90
2	467.8875	**12.5 kHz**	Part 90
3	467.8625	**12.5 kHz**	Part 90
4	467.8375	**12.5 kHz**	Part 90
5	467.8125	**12.5 kHz**	Part 90
6	467.7875	**12.5 kHz**	Part 90
7	467.7625	**12.5 kHz**	Part 90
8	467.7375	6.25 kHz	Part 90/Part 95
9	467.6875	6.25 kHz	Part 95
10	467.6375	6.25 kHz	Part 95
11	467.5875	6.25 kHz	Part 95
12	467.5375	6.25 kHz	Part 90/Part 95

The channels marked "Part 90/Part 95" are in radio spectrum *between* Part 90 and Part 95 spectrum. These channels are most perfectly suited for FRS use, as FRS users will likely include personal, business, and public safety users.

This table also lends to a very nice marketing strategy for the radio manufacturers, as they can release units with the first seven channels now, and then roll out new units in the future, with the five narrowband channels.

September 27, 1995

Respectfully submitted,

Susan L. Feit
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